

What is claimed is:

1. A lithium secondary battery comprising:

a battery case, and

an internal electrode body contained in the battery case and including a

positive electrode, a negative electrode, and a separator made of porous polymer, the positive electrode and the negative electrode being wound or laminated through the separator so that the positive electrode and the negative electrode are not brought into direct contact with each other;

wherein said battery case is composed of pure aluminum or aluminum alloy in which one or more components selected from manganese, magnesium, silicon and copper is added in aluminum.

2. A lithium secondary battery according to claim 1, wherein a relationship of  $C/(w \cdot c) \leq 0.03$  is established where current capacity is C (Ah), battery weight is w (kg), and specific heat of the battery is c (W/kg·°C).

3. A lithium secondary battery according to claim 1, wherein a relationship of  $0.004 \leq t/d \leq 0.04$  is established where said battery case is cylindrical, its outer diameter is d (mmφ), and its wall thickness is t (mm).

4. A lithium secondary battery according to claim 1, wherein current capacity is 50 Wh or more.

5. A lithium secondary battery according to claim 1, wherein it is used for an electric vehicle or a hybrid electric vehicle.

6. A lithium secondary battery according to claim 1, wherein lithium-manganese oxide ( $\text{LiMn}_2\text{O}_4$ ) is used as positive active material.

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